Listing of Claims

1. (Currently amended) A complex multiplier for adjusting phase and/or gain imbalances in a digital signal comprising:

a first set of multiplication units to multiply an in-phase ("I") component of said signal by a first set of coefficients; and

a second set of multiplication units to multiply a quadrature ("Q") component of said signal by a second set of coefficients,

wherein said I and Q components are transmitted from an output of a fast-Fourier transform ("FFT") module, and

wherein each of said coefficients in said first set and said second set are independently modifiable,

and further comprising at least two adders, each adder arranged to sum an output of the first set of multiplication units together with an output of the second set of multiplication units produce an output result that is a linear function of both the I and Q components.

2. (Canceled).

3. (Original) The complex multiplier as in claim 1 further comprising:

phase compensation logic to detect a phase imbalance in said signal and to modify one or more of said coefficients to correct said phase imbalance.

4. (Original) The complex multiplier as in claim 1 further comprising:

gain compensation logic to detect a gain imbalance in said signal and to modify one or more of said coefficients to correct said gain imbalance.

5. (Previously presented) A complex multiplier for adjusting phase and/or gain imbalances in a signal comprising:

a first set of multiplication units to multiply an in-phase ("I") component of said signal by a first set of coefficients; and

a second set of multiplication units to multiply a quadrature ("Q") component of said signal by a second set of coefficients,

wherein each of said coefficients in said first set and said second set are independently modifiable and wherein said I and Q components are transmitted from an output of a fast-Fourier transform ("FFT") module.

6. (Original) The complex multiplier as in claim 5 further comprising:

one or more adders for summing the products of said coefficients and said I and Q components.

7. (Original) The complex multiplier as in claim 6 wherein said products are transmitted to an inverse FFT module.

8. (Currently amended) A method for adjusting amplitude and/or phase imbalances in a digital complex signal comprising:

providing one or more independently-adjustable coefficients; and modifying the components I and Q of the complex signal by multiplying each of them with said independently-adjustable coefficients associated with said signal,

wherein said coefficients are frequency coefficients and said multiplication is performed after a fast-Fourier transform ("FFT") is performed on said signal.

9. (Canceled).

10. (Canceled).

11. (Original) The method as in claim 8 further comprising: adding products of each of said multiplications to produce a sum of said products.

12. (Original) The method as in claim 11 further comprising:

performing an inverse FFT on said sum of said products.

13. (Canceled)

14. (Canceled)

15. (Currently amended) A complex multiplier comprising:

means for multiplying an in-phase ("I") component of said signal by a first set of coefficients;

means for multiplying a quadrature ("Q") component of said signal by a second set of coefficients; and

wherein each of said coefficients in said first set and said second set are independently modifiable and further comprising at least two adder means, each adder means for summing an output of the first multiplier means together with an output of the second multiplier means to produce a signal output that is a linear function of both the I and Q components, and

wherein said I and Q components are transmitted from an output of a fast-Fourier transform ("FFT") module.

16. (Canceled).

17. (Previously presented) The complex multiplier as in claim 15 including:

phase compensation logic to detect a phase imbalance in said signal and to modify one or more of said coefficients to correct said phase imbalance.

18. (Previously presented) The complex multiplier as in claim 15 including:

gain compensation logic to detect a gain imbalance in said signal and to modify one or more of said coefficients to correct said gain imbalance.

19. (Canceled).

20. (Canceled).

21. (Previously presented) The complex multiplier as in claim 20 wherein said products are transmitted to an inverse FFT module.

22-26. (Canceled).

27. (New) A method for adjusting amplitude and/or phase imbalances in a digital complex signal comprising:

providing one or more independently-adjustable coefficients; and modifying the components I and Q of the complex signal by multiplying each of them with said independently-adjustable coefficients associated with said signal;

adding products of each of said multiplications to produce a sum of said products; and

performing an inverse FFT on said sum of said products.